STIC

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Search Report
EIC 2100

To: MICHAEL PHAM
Location: RND-3D18
Art Unit: 2167
Tuesday, August 28, 2007

Case Serial Number: 10/660166

From: TERRI BEALE
Location: EIC2100
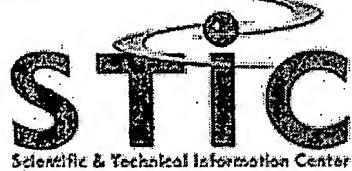RND-4B28 / RND-4B31
Phone: (571)272-8324

terrijor.beale@uspto.gov

Search Notes

Attached please find the results of your prior art search. I have highlighted items of interest. Please feel free to contact me if you have additional questions or concerns. Thank you and have a great day.

Terri Beale

sira
Search and Information
Resources Administration

235610

STIC EIC 2100
Search Request Form

Today's Date: 8/28/07

What date would you like to use to limit the search?
Priority Date: 9/11/2003 Other:

Name: Michael Pham

AU 2167   Examiner # 81563

~~BAND~~ Room # 3D18   Phone 23924

Serial # 10660166

Format for Search Results (Circle One):
(PAPER)   DISK   EMAIL

Where have you searched so far?
USP DWPI EPO JPO ACM IBM TDB
IEEE INSPEC SPI   Other ~~EAST~~ All DBs.

Is this a "Fast & Focused" Search Request? (Circle One) (YES) NO
A "Fast & Focused" Search is completed in 2-3 hours (maximum). The search must be on a very specific topic and meet certain criteria. The criteria are posted in EIC2100 and on the EIC2100 NPL Web Page at http://ptoweb/patents/stic/stic-tc2100.htm.

What is the topic, novelty, motivation, utility, or other specific details defining the desired focus of this search? Please include the concepts, synonyms, keywords, acronyms, definitions, strategies, and anything else that helps to describe the topic. Please attach a copy of the abstract, background, brief summary, pertinent claims and any citations of relevant art you have found.

Is this request for a BOARD of APPEALS case? (Circle One)   YES   (NO)

Is this case a SPECIAL CASE?   (Circle One)   YES   (NO)

Changing a join ~~of~~ order during execution of a query.

~~That is,~~ Example: query is run to execute a first join order to obtain some results but based on statistics it is decided that a different join order for the query would execute the remaining joins more efficiently for the rest of the results.

STIC Searcher Terri Beale   Phone 2-8324
Date picked up 8-28-07   Date Completed 8-28-07

Patent Abstracts

Set	Items	Description
S1	65858	JOIN???(2N)(ORDER? ? OR TABLE? ? OR PREDICATE? ? OR SELF? - OR INNER? OR NOTATION? OR EQUI OR THETA OR NATURAL? ? OR CROSS OR CARTESIAN OR OUTER OR METHOD? ? OR HASH? OR MERGE? OR SEQUENCE?) OR EQUIJOIN? ?
S2	429	(ALTER? ? OR ALTERATION OR ALTERNAT? OR CHANG??? OR CONVERT???? OR MODIFY??? OR MODIFICATION? ? OR RECONFIGUR??? OR RECONFIGURATION? ? OR REVIS??? OR TRANSFIGUR? OR TRANSFORM? OR UPDAT? OR UP()DAT???)(3N)S1
S3	5497062	PROCESS??? OR HANDL??? OR IMPLEMENTATION OR EXECUTION
S4	298882	(DURING OR TOGETHER OR SIMULTANEOUS? OR CONCURRENT? OR SAME()(TIME OR INSTANT OR MOMENT) OR COINCIDENT?? OR COINSTANTANEOUS OR WHILE OR MIDST OR THROUGHOUT)(3N)S3
S5	343665	QUERY??? OR QUERIE? ? OR REQUEST??? OR ASK??? OR INQUIR??? OR REQUISITION? ? OR QUESTION?
S6	6808	S5(3N)(OPTIMI?ATION OR OPTIM?? OR BEST OR MAXIMUM OR GREATEST OR BIGGEST OR MAXIMAL OR TOP OR FAVORABLE OR FAVOURABLE OR IMPROV????? OR BOOST? OR ENHANC? OR INCREAS? OR BETTER OR AMPLIFY??? OR AMPLIFICATION OR INTENSIFY??? OR INTENSIFICATION)
S7	0	S2 AND S4 AND S6
S8	14	S2 AND S4
S9	9	S8 NOT AY=2003:2007
S10	11	S2 AND S6
S11	10	S10 NOT AY=2003:2007
S12	10	S11 NOT S9
S13	7	S1 AND S4 AND S6
S14	7	S13 NOT (S12 OR S9)
S15	6	S14 NOT AY=2003:2007

?

9/3,K/1   (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2007 The Thomson Corporation. All rts. reserv.

0014740657 - Drawing available
WPI ACC NO: 2005-088283/200510
XRPX Acc No: N2005-077014
**User access request processing method for clustered computer system,
involves detecting whether group data is already transmitted by leader, and
performing transmission of data, if data is not already transmitted**
Patent Assignee: INT BUSINESS MACHINES CORP (IBMC)
Inventor: MILLER R; MOREY V L; THAYIB K; WILLIAMS L A
Patent Family (1 patents, 1 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	
US 6839752	B1	20050104	US 2000697398	A	20001027	200510	B

Priority Applications (no., kind, date): US 2000697398 A 20001027

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 6839752	B1	EN	11	3	

Original Publication Data by Authority

Original Abstracts:
...product and method utilize subgroup-specific leader members to exchange
group data between group members **during** the **handling** of a request **to**
organize members into a group in a clustered computer system, e.g., when
handling a membership change operation such as **a merge** or **join** . Such
subgroup leaders **may** be determined locally within individual subgroup
members, and moreover, the subgroup members may locally track...

9/3,K/2   (Item 2 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2007 The Thomson Corporation. All rts. reserv.

0013431199 - Drawing available
WPI ACC NO: 2003-522040/200349
XRPX Acc No: N2003-414140
**Database query processing method for adaptive memory allocation system,
estimates size of memory needed for operation based on memory requirements
of operator and size of memory dedicated to operator**
Patent Assignee: DAGEVILLE B (DAGE-I); ZAIT M (ZAIT-I)

Inventor: DAGEVILLE B; ZAIT M
Patent Family (1 patents, 1 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	
US 20030065688	A1	20030403	US 2001969334	A	20011001	200349	B

Priority Applications (no., kind, date): US 2001969334 A 20011001

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 20030065688	A1	EN	25	11	

...size of memory that is dedicated to the operation by the database or
data partially **processed during** the operation. The mode of operation
for continuing the data processing, is changed using memory...

Original Publication Data by Authority

Original Abstracts:
...the input data was underestimated. In one embodiment, the operator
checks, from time to time **while processing** a given **set of** input
data, its current memory usage against an operator-level target or limit
(either of...

...to the memory bound. For example, if the memory bound is decreased, a
currently-executing **hash join** operator may **change its** mode from **an**
optimal mode (in which mode there is no access to disk), to a one pass...
Claims:
...memory that can be dedicated to the operation by the database or (b)
data partially **processed during** said operation; and performing the
operation **in a** second mode to continue processing the data, using
memory of the estimated size.

9/3,K/3   (Item 3 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2007 The Thomson Corporation. All rts. reserv.

0012478413 - Drawing available
WPI ACC NO: 2002-425216/200245
Related WPI Acc No: 2002-266429
XRPX Acc No: N2002-334350
**Data stream processing method for relational database management system,
involves suspending scanning operation when there are no qualifying rows in
table, and resuming scanning operation, when qualifying rows are added**

Patent Assignee: COMPAQ COMPUTER CORP (COPQ); HEWLETT-PACKARD
DEV CO LP
 (HEWP)
Inventor: KLEIN J; RATHEE R K; VAN DER LINDEN R C; ZELLER H
Patent Family (2 patents, 1 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update
US 20020038313	A1	20020328	US 1999347997	A	19990706	200245 B
			US 2001997823	A	20011129	
US 6604102	B2	20030805	US 1999347997	A	19990706	200353 E
			US 2001997823	A	20011129	

Priority Applications (no., kind, date): US 1999347997 A 19990706; US
 2001997823 A 20011129

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 20020038313	A1	EN	30	18	Continuation of application US 1999347997
US 6604102	B2	EN			Continuation of application US 1999347997
					Continuation of patent US 6339772

  Alerting Abstract ...ADVANTAGE - Result sets created by delete and update
access operations can be joined with the **result** sets of **table** access
 operators , which enables efficient data processing through the use of
delete and/or update operations embedded...

Original Publication Data by Authority

Original Abstracts:
...mode processing of data stored in a table. A scan operator performs
table access functions **during execution** of the **streaming mode**
query. The scan operator first performs an initial scan to access rows in a
specified...

...mode processing of data stored in a table. A scan operator performs
table access functions **during execution** of the streaming mode query.
The scan **operator first** performs an initial scan to access rows in a
specified database table, and then performs...
 9/3,K/8   (Item 8 from file: 350)
DIALOG(R)File 350:Derwent WPIX

0004693722 - Drawing available
WPI ACC NO: 1989-055319/198908

Related WPI Acc No: 1989-055318

Duplex-paired devices maintenance for data processor - uses states information which allows only changed records to be copied to secondary device of dual copy

Patent Assignee: IBM CORP (IBMC); INT BUSINESS MACHINES CORP (IBMC)

Inventor: BEARDSLEY B C; BERGER B H; BOULIA L H; SMITH B P; VOSACEK R H

Patent Family (5 patents, 5 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	
EP 303856	A	19890222	EP 1988112033	A	19880724	198908	B
US 5051887	A	19910924	US 198787331	A	19870820	199141	E
			US 198789151	A	19870825		
			US 1990614983	A	19901119		
EP 303856	B1	19950405	EP 1988112033	A	19880726	199518	E
SG 199401502	A	19950317	SG 19941502	A	19941017	199522	E
DE 3853503	G	19950511	DE 3853503	A	19880726	199524	E
			EP 1988112033	A	19880726		

Priority Applications (no., kind, date): US 1990614983 A 19901119; US 198787331 A 19870820; US 198789151 A 19870825

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
EP 303856	A	EN	17	5	

Regional Designated States,Original: DE FR GB IT

Number	Kind	Lan	Pg	Dwg	Filing Notes
EP 303856	B1	EN	18	5	

Regional Designated States,Original: DE FR GB IT

Number	Kind	Lan	Filing Notes
SG 199401502	A	EN	Previously issued patent EP 303855

Number	Kind	Lan	Filing Notes
DE 3853503	G	DE	Application EP 1988112033

Based on OPI patent EP 303856

Original Titles:

...Maintaining duplex-paired storage devices **during** gap **processing** using of a dual copy function

Original Publication Data by Authority

Claims:

...a reconfiguration count, a device identification number and controller identification number recorded thereon, the status **table** in the **joint** array structure (**200**) comprising means **for** storing said **reconfiguration** count,said device identification number and said controller identification number for each of the data...

12/3,K/1   (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

0013244810 - Drawing available   ‹
WPI ACC NO: 2003-329998/200331
XRPX Acc No: N2003-264107
**Query method in computer system, involves removing right quantifiers from
left outer join query, when one of column from right quantifier is
projected out of query**
Patent Assignee: INT BUSINESS MACHINES CORP (IBMC)
Inventor: KIERNAN G G; SHANMUGASUNDARAM J
Patent Family (2 patents, 1 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	
US 20030009450	A1	20030109	US 2001887582	A	20010621	200331	B
US 6721730	B2	20040413	US 2001887582	A	20010621	200425	E

Priority Applications (no., kind, date): US 2001887582 A 20010621

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 20030009450	A1	EN	9	3	

  Alerting Abstract ...quantifier of left outer join query is projected out
of the query. Then the left **outer join** query is **converted** into simple
select query....USE - For **optimization** of **queries** in database
management **system** performed **by** computers...

...DESCRIPTION OF DRAWINGS - The figure shows the computer hardware
environment for **query optimization** .

Original Publication Data by Authority

Original Abstracts:
A **query optimization** technique that **determines whether** any column
from a right quantifier of a left outer join query is projected out...

...removed from the left outer join query, the right quantifier is removed
from the left **outer join** query, and **the left outer join** query
is **converted to** a simple **select** query. A number of steps are
performed to determine whether any of the columns quantified...

...for the right quantifier. If the right quantifier columns are not
projected out of the **query** , then the **optimization may** be performed.
  ...

...A **query optimization** technique that determines whether any column
from a **right** quantifier of a left outer join query is projected out of
the query. If not...

...query, the right quantifier is removed from the left outer join query, and the left **outer join** query **is converted** to a simple select **query** . **A** number of **steps** are performed to determine whether any of the columns quantified by the right quantifier participate...

...for the right quantifier. If the right quantifier columns are not projected out of the **query** , then the **optimization** may be performed. **Claims:**
...ON clause of the left outer join query, removing the right quantifier from the left **outer join** query, **and converting** the left **outer join** query to a simple **select query** .

...

...ON clause of the left outer join query, removing the right quantifier from the left **outer join** query, and **converting** the left **outer join** query **to** a simple select query.

12/3,K/2   (Item 2 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2007 The Thomson Corporation. All rts. reserv.

0013164617 - Drawing available
WPI ACC NO: 2003-247529/200324
XRPX Acc No: N2003-196737
Negated nested query performing method for relational database management system, involves judging whether order of joins produce semantically correct answer, when executed, by extending normal eligibility list
Patent Assignee: INT BUSINESS MACHINES CORP (IBMC)
Inventor: LINDSAY B G; LOHMAN G M; PIRAHESH M H; RAO J
Patent Family (2 patents, 1 countries)

Patent			Application			
Number	Kind	Date	Number	Kind	Date	Update
US 20020188600	A1	20021212	US 2001809846	A	20010315	200324 B
US 6665663	B2	20031216	US 2001809846	A	20010315	200382 E

Priority Applications (no., kind, date): US 2001809846 A 20010315

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 20020188600	A1	EN	36	13	

  Alerting Abstract ...ADVANTAGE - The **order** of **join** evaluation is **changed to** minimize **an** estimated past **and** can improve execution time. The semantics of **the** original **query** is preserved by EEL. The optimizer will not combine subplans using join predicate whose EEL...

12/3,K/3   (Item 3 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2007 The Thomson Corporation. All rts. reserv.

0012656898 - Drawing available
WPI ACC NO: 2002-506609/200254

XRPX Acc No: N2002-400785
Query optimization **method for relational database management system,**
involves transforming joined table **expressions by simplifying joins,**
when non-null predicate references null-supplying side of joined table
expression
Patent Assignee: INT BUSINESS MACHINES CORP (IBMC)
Inventor: CHEN Y S; LIN F; MUKAI J; TIE H; WANG Y
Patent Family (1 patents, 1 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	
US 6385603	B1	20020507	US 1999332544	A	19990614	200254	B

Priority Applications (no., kind, date): US 1999332544 A 19990614

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 6385603	B1	EN	13	4	

Query optimization **method for relational database management system,**
involves transforming joined table **expressions by simplifying joins,**
when non-null predicate references null-supplying side of joined table...

Original Titles:
Joined table expression **optimization** by **query** transformation.

Alerting Abstract ...The joined table expression included in a query, is
determined by analyzing the query. The **joined table** expressions are
transformed , by simplifying the joins within the joined table expressions,
when a non-null predicate from... ·'
DESCRIPTION - An INDEPENDENT CLAIM is included for **query optimization**
apparatus...

Original Publication Data by Authority

Original Abstracts:
...optimizer analyzes a query and triggers a sequence of transformations to
achieve optimal performance for **joined table** expressions. The
transformations include pushing down **predicates** for **joined table**
expressions and pushing down non-null predicates to simplify join operators
for joined table expressions.
Claims:
...management system, comprising:(a) analyzing the query to determine
whether it contains at least one **joined table** expression; and(**b**)
transforming the **joined table** expressions by **simplifying joins**
within the joined table expressions;(**c**) wherein the **transforming**
step comprises **transforming** a join when an ON clause from a parent
joined table expression references a null supplying side of a child
joined table expression.

12/3,K/4   (Item 4 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2007 The Thomson Corporation. All rts. reserv.

0011147485 - Drawing available

WPI ACC NO: 2002-084483/200212
XRPX Acc No: N2002-062798
**Data retrieval optimization method for relational database management
system, involves updating join indexes that are defined to reflect updated
records stored in table**
Patent Assignee: NCR CORP (NATC); NCR INT INC (NATC)
Inventor: AU G K; HOANG C K; ON AU G K
Patent Family (2 patents, 27 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	
EP 1164508	A2	20011219	EP 2001304926	A	20010606	200212	B
US 6618720	B1	20030909	US 2000594299	A	20000615	200361	E

Priority Applications (no., kind, date): US 2000594299 A 20000615

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
EP 1164508	A2	EN	15	5	

Regional Designated States,Original: AL AT BE CH CY DE DK ES FI FR GB GR
  IE IT LI LT LU LV MC MK NL PT RO SE SI TR
  Alerting Abstract ...ADVANTAGE - The performance of **queries** are
improved and the amount of overhead incurred during maintenance of **join**
indexes **is** minimized...

Original Publication Data by Authority

Original Abstracts:
...plurality of join indexed. The join indexes are defined for a table
stored in the **database** . The **join** indexes are **updated** to reflect any
updated records stored in the table, wherein one or more common joins...

...join indexed. The join indexes are defined for a table stored in the
database. The **join** indexes are **updated** to reflect any **updated** records
stored in the **table** , wherein one or **more** common **joins** are
identified **among** the **join** indexes, each of the common joins are
materialized only once in a common spool file...
Claims:
...a table in the database; and (b) updating a plurality of join indexes
defined for **the** **table** to reflect **the** **updated** records stored in the
table...

...records stored in the table, wherein one or more common joins are
identified among the **join** indexes, each **of** the common **joins** **are**
materialized only once in a common spool file, and the common spool file is
used...

 12/3,K/5   **(Item 5 from file: 350)**
DIALOG(R)File 350:Derwent WPIX
(c) 2007 The Thomson Corporation. All rts. reserv.

0009611563 - Drawing available
WPI ACC NO: 1999-561266/199947
Related WPI Acc No: 1998-120258; 1999-131663; 1999-180316
XRPX Acc No: N1999-414721

Complex structured query language queries reordering method employed in PC, mainframe, minicomputer, etc
Patent Assignee: INT BUSINESS MACHINES CORP (IBMC)
Inventor: GOEL P; IYER B R
Patent Family (1 patents, 1 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update
US 5960427	A	19990928	US 1996655300	A	19960530	199947 B
			US 1997905106	A	19970801	

Priority Applications (no., kind, date): US 1996655300 A 19960530; US 1997905106 A 19970801

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 5960427	A	EN	17	6	Continuation of application US 1996655300
					Continuation of patent US 5713015

Alerting Abstract ...ADVANTAGE - **Improves query** processing efficiency by eliminating redundant sub-expressions present in the query and thereby simplifying the...

Original Publication Data by Authority

Original Abstracts:
...by applying generalized inference propagation and generalized transitive closure in SQL queries having selection, projection, **join** , **outer join** , and **intersection operations** . The disclosed **transformations** and enumeration method unify and solve the problems of 1) unnesting join aggregate queries, and...

12/3,K/6   (Item 6 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2007 The Thomson Corporation. All rts. reserv.

0009011951 - Drawing available
WPI ACC NO: 1998-568202/199848
XRPX Acc No: N1998-442090
SQL query processing method in relational database management system - involves converting outer join operation created by decorrelation processing into correlated scalar derived table with COALESCE function
Patent Assignee: INT BUSINESS MACHINES CORP (IBMC)
Inventor: JOU M M; LEUNG T Y; PIRAHESH M H
Patent Family (1 patents, 1 countries)
Patent   Application

Number	Kind	Date	Number	Kind	Date	Update
US 5822750	A	19981013	US 1997884868	A	19970630	199848 B

Priority Applications (no., kind, date): US 1997884868 A 19970630

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes

...involves converting outer join **operation created by decorrelation
processing into correlated scalar derived table with COALESCE function**

Original Titles:
 Optimization of correlated SQL queries in a relational database
management system.

 Alerting Abstract ...correlation bindings in the outer join operation is
obtained from the correlation source. The created **outer join** operation
is **converted** into a correlated scalar derived table with a COALESCE
function...

...derived table evaluation without accessing any base tables. Eliminates
table access operations in evaluation of **query** . **Increases** efficiency.
Eliminates join operation generated by decorrelation process thereby
increasing operating efficiency of system.

Original Publication Data by Authority

Original Abstracts:
...of zero from the null. The correlation level remains one. The query
processor also performs 'a pass-through **optimization** to eliminate a join
operation for floating SELECT operation by removing a join operation
involving...
Claims:
...was created by the decorrelation operation; andresponding to a created
outer join operation by **converting** the created **outer join** operation
of the decorrelated subquery **into** a correlated **scalar derived
table** with a COALESCE function, wherein the input to the function is the
result from the...

 12/3,K/7   (Item 7 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2007 The Thomson Corporation. All rts. reserv.

0009003816 - Drawing available
WPI ACC NO: 1998-559636/199848
XRPX Acc No: N1998-436409
**Join order selecting method implemented on computer for query in database
system - computes value of Sigma metric for each join order of set of
possible join orders, selects join order for query with computed values of
Sigma metric, value of join order is sum over all joins in estimate order
of cardinality of each join**
Patent Assignee: INFORMIX SOFTWARE INC (INFO-N); INT BUSINESS MACHINES
 CORP (IBMC)
Inventor: KRISHNA M M
Patent Family (10 patents, 31 countries)

Patent			Application			
Number	Kind	Date	Number	Kind	Date	Update
EP 875838	A2	19981104	EP 1998303480	A	19980505	199848 B
AU 199863568	A	19981105	AU 199863568	A	19980424	199905 E
JP 11007454	A	19990112	JP 1998119252	A	19980428	199912 E

CA 2236494   A 19981102 CA 2236494   A 19980501 199915 E
BR 199801531   A 19990330 BR 19981531   A 19980430 199919 E
MX 199803441   A1 19990201 MX 19983441   A 19980430 200055 E
US 6138111   A 20001024 US 1997850246 A 19970502 200055 E
AU 730251   B 20010301 AU 199863568   A 19980424 200117 E
MX 211203   B 20021106 MX 19983441   A 19980430 200381 E
EP 875838   B1 20070801 EP 1998303480 A 19980505 200753 E

Priority Applications (no., kind, date): US 1997850246 A 19970502; EP
  1998303480 A 19980505

Patent Details
Number   Kind Lan Pg Dwg Filing Notes
EP 875838   A2 EN   15   6
Regional Designated States,Original: AL AT BE CH CY DE DK ES FI FR GB GR
  IE IT LI LT LU LV MC MK NL PT RO SE SI
JP 11007454   A JA   13
CA 2236494   A EN
BR 199801531   A PT
AU 730251   B EN   Previously issued patent AU 9863568

EP 875838   B1 EN
Regional Designated States,Original: BE CH DE ES FR GB IE IT LI NL SE

 Alerting Abstract ...USE - **Query optimisation** in database system and
to join order optimisation in relational database systems...
...order in multiple join order query by using metric designed to compare
relative efficiencies of **alternative join orders** .

12/3,K/8   (Item 8 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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0007767696 - Drawing available
WPI ACC NO: 1996-392950/199639
Related WPI Acc No: 1996-392947
XRPX Acc No: N1996-331190
SQL query optimisation **method for RDBMS - involves performing early-out
join operation in place of join when distinctiveness required in query and
inner columns are bound and not involved in length sensitive expressions**
Patent Assignee: INT BUSINESS MACHINES CORP (IBMC)
Inventor: LEUNG T Y; LOHMAN G M; PIRAHESH M H; SHEKITA E J; SIMMEN D E
Patent Family (1 patents, 1 countries)
Patent   Application
Number   Kind Date Number   Kind Date   Update
US 5548758   A 19960820 US 1995385177 A 19950207 199639 B
           US 1995463968 A 19950605

Priority Applications (no., kind, date): US 1995385177 A 19950207; US
  1995463968 A 19950605

Patent Details
Number   Kind Lan Pg Dwg Filing Notes
US 5548758   A EN   12   5 Division of application US 1995385177

SQL query optimisation method for RDBMS...

Original Titles:
 Optimization of SQL queries using early-out join transformations of
column-bound relational tables.

Original Publication Data by Authority

Original Abstracts:
...of the outer table when a single match is found in the inner table. To
transform a many -to- many join to an early-out join, the query must
include a requirement for distinctiveness, either explicitly...

12/3,K/9   (Item 9 from file: 350)

0007767693 - Drawing available
WPI ACC NO: 1996-392947/199639
Related WPI Acc No: 1996-392950
**Computer database standard query language query optimising - scanning inner
table for match for each row of outer table and terminating scan for each
row of outer table when match is found in inner table**
Patent Assignee: INT BUSINESS MACHINES CORP (IBMC)
Inventor: LEUNG T Y; LOHMAN G M; PIRAHESH M H; SHEKITA E J; SIMMEN D E
Patent Family (1 patents, 1 countries)

Patent			Application			
Number	Kind	Date	Number	Kind	Date	Update
US 5548754	A	19960820	US 1995385177	A	19950207	199639 B

Priority Applications (no., kind, date): US 1995385177 A 19950207

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 5548754	A	EN	12	5	

Original Titles:
 Optimization of SQL queries using early-out join transformations.

Original Publication Data by Authority

Original Abstracts:
...of the outer table when a single match is found in the inner table. To
transform a many -to- many join to an early-out join, the query must
include a requirement for distinctiveness, either explicitly...

12/3,K/10   (Item 10 from file: 350)

0006892703 - Drawing available
WPI ACC NO: 1994-285857/199435
XRPX Acc No: N1994-225092
**Joint queries optimising process - assigning join method at random to each
of joint operations to produce current joint method assignment scheme**
Patent Assignee: INT BUSINESS MACHINES CORP (IBMC)
Inventor: IYER B R; SWAMI A N
Patent Family (1 patents, 1 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	
US 5345585	A	19940906	US 1991801306	A	19911202	199435	B

Priority Applications (no., kind, date): US 1991801306 A 19911202

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 5345585	A	EN	16	7	

Original Titles:
Method for optimizing processing of join **queries** by determining **optimal**
processing order and assigning optimal join methods to each of the join
operations

 Alerting Abstract ...join order scheme then assigning the current join
method in response to the identified optimal **joint method** to produce no
change condition...

Original Publication Data by Authority

Original Abstracts:
...to determine a join optimization sequence and further refinement is
provided by determining costs for **alternate join order sequences
using alternate join methods.**
Claims:
...join methods; and (f) repeating steps (b) through (e) until there is no
change produced to said current **join order scheme** and said
current **join method assignment scheme.**

15/3,K/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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0012990658 - Drawing available
WPI ACC NO: 2003-068506/200306
XRPX Acc No: N2003-053213
**Accessing database information defined by analytic application by
generating metrics and dividing ranking query into sub-commands for data
table generation**
Patent Assignee: INFORMATICA CORP (INFO-N)
Inventor: HSU J; SHRINGERI S
Patent Family (4 patents, 99 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	
WO 2002103575	A2	20021227	WO 2002US19279	A	20020618	200306	B
US 6640226	B1	20031028	US 2001885666	A	20010619	200372	E

EP 1402417   A2 20040331 EP 2002746569   A 20020618 200424 E
                    WO 2002US19279   A 20020618
AU 2002316277   A1 20030102 AU 2002316277   A 20020618 200452 E

Priority Applications (no., kind, date): US 2001885666 A 20010619

Patent Details
Number   Kind Lan Pg Dwg Filing Notes
WO 2002103575   A2 EN   28   5
National Designated States,Original: AE AG AL AM AT AU AZ BA BB BG BR BY
    BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID
    IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ
    NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG UZ VN
    YU ZA ZM ZW
Regional Designated States,Original: AT BE CH CY DE DK EA ES FI FR GB GH
    GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZM ZW
EP 1402417   A2 EN   PCT Application WO 2002US19279
                    Based on OPI patent WO 2002103575
Regional Designated States,Original: AL AT BE CH CY DE DK ES FI FR GB GR
    IE IT LI LT LU LV MC MK NL PT RO SE SI TR
AU 2002316277   A1 EN   Based on OPI patent WO 2002103575

Original Titles:
...Ranking **query** **optimization** in analytic applications...

Original Publication Data by Authority

Original Abstracts:
...data is joined as the last step of the process in order to minimize the
number of **join** operations performed by the query while the batch is
being executed, thereby facilitating the query...

...query operation. The extracted data is joined as the last step of the
process in **order** to minimize the number of **join** operations performed
by the query while the batch is being executed, thereby facilitating the
query process .

...

...the process in order to minimize the number of join operations performed
by the query **while** the batch is being executed, thereby facilitating the
query **process** .

0010976890 - Drawing available
WPI ACC NO: 2001-601079/200168
XRPX Acc No: N2001-448312
Database table joining method for computer database system, involves
setting flags of rows of probe table that matches with rows of standard
table

Patent Assignee: INT BUSINESS MACHINES CORP (IBMC)
Inventor: LINDSAY B G; SHEKITA E J
Patent Family (1 patents, 1 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	
US 6253197	B1	20010626	US 1998167395	A	19981006	200168	B

Priority Applications (no., kind, date): US 1998167395 A 19981006

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 6253197	B1	EN	13	7	

Database table joining method for computer database system, involves setting flags of rows of probe table that matches with...

Original Titles:
System and method for hash loops join of data using outer join and early-out join.

Alerting Abstract ...standard table and probe table are reversed. The rows and columns of standard and probe tables are joined during hash loop execution process . The rows of the probe table that matches with the rows of standard table are...
...ADVANTAGE - The database table joining process improves efficiency of query processing for a computer database system, by joining the probe table and standard table using hash loop join .

...

...DESCRIPTION OF DRAWINGS - The figure shows the schematic diagram for joining the database tables .

Original Publication Data by Authority

Original Abstracts:
A system and method for joining a build table to a probe table in response to a query for data includes executing a hash loops join of the build table and the probe table. Matched rows are joined and output when the rows match each other by satisfying a join predicate . In an outer join , unmatched rows in the probe table are joined to a NULL build table field values and output, such that all rows of the...

...once" table defines the probe table and in response to a query for unique probe table outputs, the joining of a probe table row, once joined and output a first time, to any other rows in the other table is prevented...

...of whether the row might match other rows. In both the hash loops early-out join and the hash loops outer join , when the build table is larger than main memory, the roles of the build and...
Claims:
A computer-implemented method for integrating at least one of: an early-out table join , and a left or right outer table join , in a hash loops procedure when a size of a build table of the hash loops procedure exceeds a main...

...the method comprising:reversing the roles of the build table and probe table;executing a **hash loops join** of the build **table** and **probe table** ; andflagging rows of the probe table that match rows of the build table.

15/3,K/3   (Item 3 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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0009533518 - Drawing available
WPI ACC NO: 1999-478288/199940
XRPX Acc No: N1999-356022
Duplicate tuples elimination method in database management system
Patent Assignee: SYBASE INC (SYBA-N)
Inventor: HILLEGAS R
Patent Family (1 patents, 1 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	
US 5937401	A	19990810	US 1996757367	A	19961127	199940	B

Priority Applications (no., kind, date): US 1996757367 A 19961127

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 5937401	A	EN	15	2	

 Alerting Abstract ...selection criteria is executed, by scanning the selected database tables (250) according to the determined **join order** . The **inner** most table is scanned, thereby executing the filter which filters the duplicate tuples from the...
...specifies the selection criteria for the information of interest from the database system. The determined **join order** indicates the innermost and outermost tables of the selected join so as to guarantee that...

Original Publication Data by Authority ·

Original Abstracts:
...to perform a sort. The filter, which is implemented as an optimization at the level **of** the **query** processor, comprises two basic pieces. The first piece, INIT--FILTER, simply serves to initialize the...

...is constructed from it. The positions of both INIT--FILTER and FILTER in a given **join order** are important. INIT--FILTER immediately preceeds the **scan** which initializes the filter; FILTER immediately follows the scan which actually performs the filtering.
Claims:
...interest is to be selected by a database join operation which joins selected ones of **said** database **tables** by one or more columns shared between tables (key columns), said query further specifying that the particular information is to be returned as distinct tuples;determining a **join order** specifying a **sequence** indicating **how said** selected .ones of said database tables are to be preferentially scanned by the system for determining which tuples of each said selected ones of said database

tables qualify, said **join order** indicating **innermost** and outermost **tables of** the **join** and being **selected** so as **to** guarantee that tuples will stream in order **during execution** of the query;initializing a **filter** at the outermost table for said one or more key columns, for forcing the method...

...tuple stream satisfying said selection criteria, said executing step including scanning, according to said determined **join order**, said selected ones of said database tables; andas the **innermost table** is scanned, executing the filter for filtering duplicate tuples from the tuple stream by discarding...

15/3,K/4   (Item 4 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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0009011950 - Drawing available
WPI ACC NO: 1998-568201/199848
Related WPI Acc No: 1997-526022; 1998-531458; 2000-375416
XRPX Acc No: N1998-442089
Database query processing method e.g. for SQL based data processing system, RDBMS - involves retrieving data pages for storing information located by navigating clustered index, a specific block size
Patent Assignee: SYBASE INC (SYBA-N)
Inventor: AGARWAL B
Patent Family (1 patents, 1 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update
US 5822749	A	19981013	US 1994273867	A	19940712	199848 B
			US 1995554126	A	19951106	
			US 199631177	P	19961119	
			US 1997808604	A	19970228	

Priority Applications (no., kind, date): US 199631177 P 19961119; US 1995554126 A 19951106; US 1994273867 A 19940712; US 1997808604 A 19970228
Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 5822749	A	EN	38	11	C-I-P of application US 1994273867
					C-I-P of application US 1995554126
					Related to Provisional US 199631177
					C-I-P of patent US 5680573

Original Titles:
Database system with methods for **improving query** performance with cache **optimization** strategies.

Alerting Abstract ...ADVANTAGE - **Improves** data and **query** processing efficiency.

Original Publication Data by Authority

Original Abstracts:
Database system and methods are described for improving execution speed of

database queries (e.g., for transaction processing and for decision support) by optimizing use of buffer caches. The system includes an Optimizer for formulating an optimal strategy for a **given query** . More particularly, the Optimizer communicates with a Buffer Manager before it formulates the query plan...

...is, in effect, passed down to the Buffer Manager so that it may service the **query** using an **optimal caching** strategy--one **based** on the dynamics of the query itself. Based on the "hints" received from the Optimizer...

...clustered index, and non-clustered index access. Additional strategies are described for multi-table access **during processing of join queries.** >

15/3,K/5   (Item 5 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2007 The Thomson Corporation. All rts. reserv.

0008916630 - Drawing available
WPI ACC NO: 1998-467096/199840
Related WPI Acc No: 1998-347976
XRPX Acc No: N1998-363927
Parallel query method for database in multiprocessor system - involves dividing query into multiple sub-queries corresponding to subsets of selected table having maximum estimated contribution to overall cost of query and allowing partitioned access
Patent Assignee: INT BUSINESS MACHINES CORP (IBMC)
Inventor: BHATTACHARYA P P; CHUNG J; PIRAHESH M H; SELINGER P G; VIVEROS M S; WANG Y; ZAINO L P
Patent Family (1 patents, 1 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	
US 5797000	A	19980818	US 1993148769	A	19931104	199840	B
			US 1996667056	A	19960620		

Priority Applications (no., kind, date): US 1993148769 A 19931104; US 1996667056 A 19960620

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 5797000	A	EN	15	12	Division of application US 1993148769

Alerting Abstract ...contribution of each table (200,300) stored in the database, to the overall cost of **query** . The table with **maximum** estimated contribution to overall cost of query and allowing partitioned access is selected...

Original Publication Data by Authority

Original Abstracts:
A method of performing a **parallel join** operation on a pair of relations R1 and R2 in a system containing P processors...

...P/Q processors each. The system contains disk storage for each cluster, shared by the **processors** of that cluster, **together** with a shared **intermediate** memory (SIM) accessible by all processors. The relations R1 and R2 to be joined are...

...larger time estimates are assigned (and the corresponding tuples shipped) to the cluster to which **processor** p belongs, **while** tasks with smaller time estimates are assigned to the SIM, which is **regarded** as a **universal** cluster (cluster 0). The actual task-to-processor assignments are determined dynamically during the join phase in accordance with the dynamic longest processing time first (DLPT) algorithm. Each **processor** within a cluster picks its next task at any given decision point to be the
...

Claims:
...of each of said tables to the overall cost of said query; selecting the table **with** the **greatest** estimated contribution to the overall **cost** of said **query** that also permits partitioned access; partitioning the selected table into a plurality of subsets of...

15/3,K/6   (Item 6 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2007 The Thomson Corporation. All rts. reserv.

0005677979 - Drawing available
WPI ACC NO: 1991-289561/199140
XRPX Acc No: N1991-221699
Database processing system with functional co-processor - uses specialised functional units for database operations centred on partitioned working store
Patent Assignee: IBM CORP (IBMC); INT BUSINESS MACHINES CORP (IBMC)
Inventor: BAUM R I; BRENT G A; GIBSON D H; LINDQUIST D B
Patent Family (10 patents, 4 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	
EP 449096	A	19911002	EP 1991104337	A	19910320	199140	B
US 5210870	A	19930511	US 1990499844	A	19900327	199320	E
EP 449096	A3	19930721	EP 1991104337	A	19910320	199406	E
US 5530883	A	19960625	US 1990499844	A	19900327	199631	E
			US 1993993165	A	19930211		
			US 1994327348	A	19941021		
US 5537603	A	19960716	US 1990499844	A	19900327	199634	E
			US 1993993254	A	19930210		
			US 1994323424	A	19941014		
US 5537604	A	19960716	US 1990499844	A	19900327	199634	E
			US 1992993252	A	19921218		
			US 1994327345	A	19941021		
US 5537622	A	19960716	US 1990499844	A	19900327	199634	E
			US 1992993324	A	19921218		
			US 1994323425	A	19941014		
US 5548769	A	19960820	US 1990499844	A	19900327	199639	E
			US 1992993253	A	19921218		
US 5590362	A	19961231	US 1990499844	A	19900326	199707	E
			US 1992993170	A	19921218		
			US 1994243729	A	19940517		

US 1995378985 A 19950124
US 5619713 A 19970408 US 1990499844 A 19900327 199720 E
US 1993993270 A 19930211
US 1995390143 A 19950217

Priority Applications (no., kind, date): US 1990499844 A 19900326; US
1990499844 A 19900327; US 1992993170 A 19921218; US 1992993252 A
19921218; US 1992993253 A 19921218; US 1992993324 A 19921218; US
1993993254 A 19930210; US 1993993165 A 19930211; US 1993993270 A
19930211; US 1994243729 A 19940517; US 1994323424 A 19941014; US
1994323425 A 19941014; US 1994327345 A 19941021; US 1994327348 A
19941021; US 1995378985 A 19950124; US 1995390143 A 19950217

Patent Details

Number   Kind Lan Pg Dwg Filing Notes
EP 449096   A   EN
Regional Designated States,Original: DE FR GB IT
US 5210870   A   EN   44 22
EP 449096   A3 EN
US 5530883   A   EN   46 22 Division of application US 1990499844

                         Continuation of application US
    1993993165
                         Division of patent US 5210870
US 5537603   A   EN   46 22 Division of application US 1990499844

                         Continuation of application US
    1993993254
                         Division of patent US 5210870
US 5537604   A   EN   46 22 Division of application US 1990499844

                         Continuation of application US
    1992993252
                         Division of patent US 5210870
US 5537622   A   EN   18 26 Division of application US 1990499844

                         Continuation of application US
    1992993324
                         Division of patent US 5210870
US 5548769   A   EN   47 22 Division of application US 1990499844

                         Division of patent US 5210870
US 5590362   A   EN   46 22 Division of application US 1990499844

                         Continuation of application US
    1992993170
                         Continuation of application US
    1994243729
                         Division of patent US 5210870
US 5619713   A   EN   47 22 Division of application US 1990499844

                         Continuation of application US
    1993993270
                         Division of patent US 5210870

Alerting Abstract ...The **processing** elements work **together** to

process database queries such as sort/merges (302), searching (304), has-code generation (306), record field...

Equivalent Alerting Abstract ...functional units: a memory interface and field extractor/assembler, a Predicate Evaluator, a combined sort/ **merge / join** unit, a **hasher**, and a microcoded control processor, which are all centered around a partitioned Working Store. Each...

...function it performs, the executes its portion of the query efficiently. All functional units execute **simultaneously** under the control **processor** to achieve the desired results...

...Many different database functions can be performed by chaining simple operations **together**. The **processor** can effectively replace the CPU bound portions of complex database operations with functions that run at the maximum memory access rate **improving** performance on complex **queries**

Original Publication Data by Authority

Original Abstracts:
...functional units: a memory interface and field extractor/assembler, a Predicate Evaluator, a combined sort/ **merge / join** unit, a **hasher**, and a microcoded control processor, are all centered around a partitioned Working Store. Each functional...

...function it performs, and executes its portion of the query efficiently. All functional units execute **simultaneously** under the control **processor** to achieve the desired results. Many different database functions can be performed by chaining simple operations **together**. The **processor** can effectively replace the CPU bound portions of complex database operations with functions that run at the maximum memory access rate **improving** performance on complex **queries**.

...

...functional units: a memory interface and field extractor/assembler, a Predicate Evaluator, a combined sort/ **merge / join** unit, a **hasher**, and a microcoded control processor, are all centered around a partitioned Working Store. Each functional...

...function it performs, and executes its portion of the query efficiently. All functional units execute **simultaneously** under the control **processor** to achieve the desired results. Many different database functions can be performed by chaining simple operations **together**. The **processor** can effectively replace the CPU bound portions of complex database operations with functions that run at the maximum memory access rate **improving** performance on complex **queries**.

...

...functional units: a memory interface and field extractor/assembler, a Predicate Evaluator, a combined sort/ **merge / join** unit, a **hasher**, and a microcoded control processor, are all centered around a partitioned Working

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All functional units execute **simultaneously** under the control **processor**
to achieve the desired results. Many different database functions can be
performed by chaining simple operations **together** . The **processor** can
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with functions that run at the maximum memory access rate **improving**
performance on complex **queries** .

...

...functional units: a memory interface and field extractor/assembler, a
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All functional units execute **simultaneously** under the control **processor**
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performed by chaining simple operations **together** . The **processor** can
effectively replace the CPU bound portions of complex database operations
with functions that run at the maximum memory access rate **improving**
performance on complex **queries** .

...

...functional units: a memory interface and field extractor/assembler, a
Predicate Evaluator, a combined sort/ **merge** / **join** unit, a **hasher** , and a
microcoded control processor, are all centered around a partitioned Working
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to achieve the desired results. Many different database functions can be
performed by chaining simple operations **together** . The **processor** can
effectively replace the CPU bound portions of complex database operations
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...
...functional units: a memory interface and field extractor/assembler, a

Predicate Evaluator, a combined sort/ **merge / join** unit, a **hasher** , and a
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All functional units execute **simultaneously** under the control **processor**
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...

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Predicate Evaluator, a combined sort/ **merge / join** unit, a **hasher** , and a
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All functional units execute **simultaneously** under the control **processor**
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with functions that run at the maximum memory access rate **improving**
performance on complex **queries** .

...

...functional units: a memory interface and field extractor/assembler, a
Predicate Evaluator, a combined sort/ **merge / join** unit, a **hasher** , and a
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Store. Each functional...

...function it performs, and executes its portion of the query efficiently.
All functional units execute **simultaneously** under the control **processor**
to achieve the desired results. Many different database functions can be
performed by chaining simple operations **together** . The **processor** can
effectively replace the CPU bound portions of complex database operations
with functions that run at the maximum memory access rate **improving**
performance on complex **queries. >**

Claims:
...The **processing** elements work **together** to **process** database queries
such as sort/merges (302), searching (304), has-code generation (306),
record field...

...database command and a location in the system memory of a predicate to
be used **during** the **processing** of the database command;</br>(b) parsing
the database command into a sequence of predetermined database...

...in the predicate evaluation program for processing the query;</br>a
stack for temporarily holding data **during** the **processing** of the
predicate evaluation program, said data being other than said predicate
evaluation program; and...

Patent Fulltext

```
Set    Items  Description
S1     35871  JOIN???(2N)(ORDER? ? OR TABLE? ? OR PREDICATE? ? OR SELF? -
              OR INNER? OR NOTATION? OR EQUI OR THETA OR NATURAL? ? OR CROSS
              OR CARTESIAN OR OUTER OR METHOD? ? OR HASH? OR MERGE? OR SEQ-
              UENCE?) OR EQUIJOIN? ?
S2     756    (ALTER? ? OR ALTERATION OR ALTERNAT? OR CHANG??? OR CONVER-
              T???? OR MODIFY??? OR MODIFICATION? ? OR RECONFIGUR??? OR REC-
              ONFIGURATION? ? OR REVIS??? OR TRANSFIGUR? OR TRANSFORM? OR U-
              PDAT? OR UP()DAT??? )(3N)S1
S3     1702320 PROCESS??? OR HANDL??? OR IMPLEMENTATION OR EXECUTION
S4     407674 (DURING OR TOGETHER OR SIMULTANEOUS? OR CONCURRENT? OR SAM-
              E()(TIME OR INSTANT OR MOMENT) OR COINCIDENT?? OR COINSTANTAN-
              EOUS OR WHILE OR MIDST OR THROUGHOUT)(3N)S3
S5     2088168 QUERY??? OR QUERIE? ? OR REQUEST??? OR ASK??? OR INQUIR???
              OR REQUISITION? ? OR QUESTION?
S6     13650  S5(3N)(OPTIMI?ATION OR OPTIM?? OR BEST OR MAXIMUM OR GREAT-
              EST OR BIGGEST OR MAXIMAL OR TOP OR FAVORABLE OR FAVOURABLE OR
              IMPROV????? OR BOOST? OR ENHANC? OR INCREAS? OR BETTER OR AM-
              PLIFY??? OR AMPLIFICATION OR INTENSIFY??? OR INTENSIFICATION)
S7     0      S2(50N)S4(50N)S6
S8     0      S2(100N)S4(100N)S6
S9     5      S2(25N)S4
S10    0      S2(25N)S6
S11    4      S2(100N)S6
S12    4      S9 NOT AY=2003:2007
S13    2      S11 NOT AY=2003:2007
S14    2      S13 NOT S12
S15    11     S1(100N)S4(100N)S6
S16    11     S15 NOT (S14 OR S12)
S17    5      S16 NOT AY=2003:2007
```

12/3,K/2 (Item 1 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
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00999987 **Image available**
DYNAMIC AND AUTOMATIC MEMORY MANAGEMENT
GESTION DE MÉMOIRE DYNAMIQUE ET AUTOMATIQUE
Patent Applicant/Assignee:
  ORACLE INTERNATIONAL CORPORATION, 500 Oracle Parkway, Redwood Shores, CA
    94065, US, US (Residence), US (Nationality)
Inventor(s):
  DAGEVILLE Benoit, 625 Canoe Court, Redwood Shores, CA 94065, US,
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Legal Representative:
  SURYADEVARA Omkar K (agent), Silicon Valley Patent Group LLP, 2350
    Mission College Boulevard, Suite 360, Santa Clara, CA 95054, US,
Patent and Priority Information (Country, Number, Date):
  Patent: WO 200329982 A2-A3 20030410 (WO 0329982)
  Application: WO 2002US31223 20020930 (PCT/WO US0203 1223)
  Priority Application: US 2001969290 20011001.
Designated States:
(Protection type is "patent" unless otherwise stated - for applications
prior to 2004)
  AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ
  EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR
  LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI
  SK SL TJ TM TN TR TT TZ UA UG UZ VN YU ZA ZM ZW
  (EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LU MC NL PT SE SK TR
  (OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
  (AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW
  (EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 9395

Fulltext Availability:
  Detailed Description

Detailed Description
... operators of such embodiments may revise their estimates of memory
requirements dynamically, during their operation.

  Modifications to a **hash - join** operator and to a sort operator to
  implement a change of mode and change of allocated memory **during
  execution** are discussed briefly below.

  In one embodiment, a hash-join operator of the AUTO version...

12/3,K/3 (Item 2 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
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00952055   **Image available**

IN SITU RECOVERY FROM A RELATIVELY LOW PERMEABILITY FORMATION CONTAINING
HEAVY HYDROCARBONS
RECUPERATION IN SITU DANS UNE FORMATION A PERMEABILITE RELATIVEMENT BASSE
CONTENANT DES HYDROCARBURES

Patent Applicant/Assignee:
 SHELL OIL COMPANY, Christensen, Del, P.O. Box 2463, Houston, TX
  77252-2463, US, US (Residence), US (Nationality)
Inventor(s):
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 KEEDY Charlie R, 5118 Danebridge Drive, Houston, TX 77084, US,
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 ZHANG Etuan, 5425 Loch Lomond Drive, Houston, TX 77096, US,
 FOWLER Thomas D, 634 Aldersgate Court, Katy, TX 77450, US,
 COLES John M, 703 Park Meadow Drive, Katy, TX 77450, US,
 SCHOELING Lanny, 2006 Emerald Loft Circle Drive, Katy, TX 77450, US,
 CARL Fred G, 8406 Edgemoor Drive, Houston, TX 77036, US,
 HUNSUCKER Bruce G, 5149 Mockingbird Lane, Katy, TX 77493, US,
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 BIELAMOWICZ Lawrence J, 5223 Chestnut, Bellaire, TX 77401, US,
 MESSIER Margaret, 1404 4A Street NW, Calgary, Alberta T2M 3B1, CA,
 PRATT Kip, Box 4, Site 7, RR-1, Cochrane, Alberta T4C 1A1, CA,
 LEPPER Bruce, 115 Waterloo Drive S.W., Calgary, Alberta T3C 3G4, CA,
 BASS Ronald, 3772 Ingold Street, Houston, TX 77005, US,
 MIKUS Tom, 906 Coachlight Drive, Houston, TX 77077-1108, US,
 GLANDT Carlos, Insulindeweg 27, NL-2612 EL Delft, NL,
Legal Representative:
 MEYERTONS Eric B (agent), Conley, Rose & Tayon, P.C., P.O. Box 398,
  Austin, TX 78767-0398, US,

EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR
LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI
SK SL TJ TM TN TR TT TZ UA UG UZ VN YU ZA ZM ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 417978
Fulltext Availability:
  Detailed Description

Detailed Description
... of an embodiment of a method for design and/or control of an in situ
process .

  FIG. 30 depicts a method of modeling

12/3,K/4   (Item 3 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
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00217841   **Image available**
METHOD OF EVALUATING A RECURSIVE QUERY OF A DATABASE
**PROCEDE POUR EVALUER UNE INTERROGATION RECURSIVE DANS UNE BASE DE
DONNEES**
Patent Applicant/Assignee:
  HEWLETT-PACKARD COMPANY,
Inventor(s):
  SHAN Ming-Chien,
  NEIMAT Marie-Anne,
Patent and Priority Information (Country, Number, Date):
  Patent: WO 9215066 A1 19920903
  Application: WO 92US1458 19920225 (PCT/WO US9201458)
  Priority Application: US 91256 19910226
Designated States:
(Protection type is "patent" unless otherwise stated - for applications
prior to 2004)
  AT BE CH DE DK ES FR GB GR IT JP LU MC NL SE
Publication Language: English
Fulltext Word Count: 9315

Fulltext Availability:
  Detailed Description

Detailed Description
... carried by "X". In order to preserve the correct answer, the join
operator has to **transform** to a right **outer join** operator (see,
generally, Date, C.. Relational Databases. Selected Writings,
Addison-Wesley Publishing Company, 1986) as it moves inside the fixpoint
operator.

  During query **execution** , all tuples which are strictly the result of
the outer join may be marked so...

14/3,K/1   (Item 1 from file: 348)

00966669
Database query system and method
Datenbanksuchsystem und -verfahren
Systeme et methode d'interrogation de bases de donnees
PATENT ASSIGNEE:
  INTERNATIONAL BUSINESS MACHINES CORPORATION, (200123), , Armonk, NY
    10504, (US), (Applicant designated States: all)
INVENTOR:
  Carey, Michael J., 1473 Almaden Valley Drive, San Jose, California 95120,
  (US)
  Kiernan, Gerald G., 1074 Wallace Drive, San Jose, California 95120, (US)
LEGAL REPRESENTATIVE:
  Davies, Simon Robert (75452), IBM, United Kingdom Limited, Intellectual
    Property Law, Hursley Park, Winchester, Hampshire SO21 2JN, (GB)
PATENT (CC, No, Kind, Date): EP 877328 A2 981111 (Basic)
                 EP 877328 A3 000119
APPLICATION (CC, No, Date):   EP 98303616 980508;
PRIORITY (CC, No, Date): US 853294 970509; US 853976 970509
DESIGNATED STATES: DE; FR; GB
EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI
INTERNATIONAL PATENT CLASS (V7): G06F-017/30
ABSTRACT WORD COUNT: 360
NOTE:
  Figure number on first page: 9B

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:
Available Text Language Update   Word Count
      CLAIMS A (English) 9846   1410
      SPEC A   (English) 9846   17780
Total word count - document A   19190
Total word count - document B   0
Total word count - documents A + B   19190

...SPECIFICATION query that drives the object builder.
   The preferred embodiment of this invention also contains a **query**
optimization function which determines in which situations or cases
objects should be built. For example, when...

...built. Also, if a query traverses a reference type attribute, but the
query can be **transformed** into a **join** or **outer join** operation
between relational tables, then no object building is required. In these
above described situations...

14/3,K/2   (Item 1 from file: 349)

00376923
STRUCTURED FOCUSED HYPERTEXT DATA STRUCTURE

STRUCTURE DE DONNEES HYPERTEXTE ARTICULEE SUR LA STRUCTURATION

Fulltext Availability:
 Detailed Description

Detailed Description
... Pen
 Arrow Global Const MASK-PEN = 9 9
 Global Const CROSSHAIR 2 '2 - Mask Pen
 Cross Global Const NOT-XOR-PEN = IO
 Global Const IBEAM = 3 '3 - I- I 0 - Not...Contribut
 make sure know that or Screen") =
 chapriurn is a parent UncomplitedPageScreenID
 Set q = tblTableOfChapters. **Update**
 dbHyperText.OpenQueryDef("Set I
 IsThisTheLast") I now must update the priorities
 q! [Chapter To Set...Screen ID")
 End Function tl("Type of chapter") =
 tblTable0fChapters("Type of chapter")
 Function t l. **Update**
 MakeBackupOfTOCandLinks l
 I tblTableOfChapters.MoveNext
 'This routine copies all of the TOC Loop
 into a...

...out the the present backup Set t2 =
 tables dbHyperText.OpenTable("Links from
 Dim q As **QueryDef**, tl As Table Parent and Children Chapters")
 Do Until t2.EOF
 I

tl.AddNew
148...

17/3,K/2   (Item 2 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS
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00458617
Database processing system.
Datenbankverarbeitungssystem.
Systeme de traitement de base de donnees.
PATENT ASSIGNEE:
  International Business Machines Corporation, (200120), Old Orchard Road,
    Armonk, N.Y. 10504, (US), (applicant designated states: DE;FR;GB;IT)
INVENTOR:
  Baum, Richard Irwin, 5 Arbor Hill Drive, Poughkeepsie, New York 12603,
    (US)
  Brent, Glen Alan, 55 Ward Place, Fishkill, New York 12590, (US)
  Gibson, Donald Henderson, Leprechaun Lane, RD No. 1, Box 387, Salt Point,
    New York 12578, (US)
  Lindquist, David Bruce, 106 Hillis Terrace, Poughkeepsie, New York 12603,
    (US)
LEGAL REPRESENTATIVE:
  Harrison, Robert John (74511), IBM Deutschland Informationssysteme GmbH,
    D-70548 Stuttgart, (DE)
PATENT (CC, No, Kind, Date): EP 449096 A2 911002 (Basic)
                             EP 449096 A3 930721
APPLICATION (CC, No, Date):   EP 91104337 910320;
PRIORITY (CC, No, Date): US 499844 900327
DESIGNATED STATES: DE; FR; GB; IT
INTERNATIONAL PATENT CLASS (V7): G06F-015/40;
ABSTRACT WORD COUNT: 148

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:
Available Text Language Update   Word Count
   CLAIMS A (English) EPABF1   1691
   SPEC A   (English) EPABF1   20259
Total word count - document A   21950
Total word count - document B   0
Total word count - documents A + B   21950

...ABSTRACT functional units: a memory interface and field
  extractor/assembler, a Predicate Evaluator, a combined sort/ **merge / join**
  unit, a **hasher** , and a microcoded control processor, are all centered
  around a partitioned Working Store. Each functional...

...function it performs, and executes its portion of the query efficiently.
  All functional units execute **simultaneously** under the control
  processor to achieve the desired results. Many different database
  functions can be performed by chaining simple operations **together** . The
  processor can effectively replace the CPU bound portions of complex
  database operations with functions that run at the maximum memory access
  rate **improving** performance on complex **queries** . (see image in original
  document)

00893410   **Image available**
NESTED CONDITIONAL RELATIONS (NCR) MODEL AND ALGEBRA
MODELE DE RELATIONS CONDITIONNELLES IMBRIQUEES
Patent Applicant/Assignee:
 NIMBLE TECHNOLOGY INC, Suite 100, 1938 Fairview Avenue East, Seattle,
  Washington 98102, US, US (Residence), US (Nationality), (For all
  designated states except: US)
Patent Applicant/Inventor:
 DRAPER Denise L, 3130 Portage Bay Place E., Slip D, Seattle, WA 98102, US
 , US (Residence), US (Nationality), (Designated only for: US)
Legal Representative:
 PIRIO Maurice J (et al) (agent), Perkins Coie LLP, P.O. Box 1247,
  Seattle, WA 98111-1247, US,
Patent and Priority Information (Country, Number, Date):
 Patent: WO 200227551 A2 20020404 (WO 0227551)
 Application: WO 2001US24353 20010801 (PCT/WO US0124353)
 Priority Application: US 2000222070 20000801
Designated States:
(Protection type is "patent" unless otherwise stated - for applications
prior to 2004)
 AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ
 EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR
 LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL
 TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
 (EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR
 (OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
 (AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW
 (EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 21610

Fulltext Availability:
 Detailed Description

Detailed Description
... child(phone, $ph)
 Figure 2 represents a JoinIn graph (JIG) for the match expression of
 Table 8.

 The **Joinhi** graph is a data structure that facilitates the **optimization**
  of the **query** to be executed against the data store. This JIG indicates
  that the Departments, Employees, and...
 ...10 and a construct program 320. A compiler of the data integration
  engine generates the **execution** program **during** a compilation phase.
  The extract program is a series of operations on a data extracted...

00867315   **Image available**
SYSTEM AND METHOD FOR A DECISION ENGINE AND ARCHITECTURE FOR PROVIDING
HIGH-PERFORMANCE DATA QUERYING OPERATIONS
SYSTEME ET PROCEDE SE RAPPORTANT A UN MOTEUR DECISIONNEL ET A UNE
ARCHITECTURE ASSURANT DES OPERATIONS DE DEMANDES DE DONNEES DE GRANDE
QUALITE

Fulltext Availability:
  Detailed Description

Detailed Description
... through the other tables using these the results. As known in the art,
  many different **query optimization** algorithms can be applied, but in
  each case, the' **joining** " of **tables** is performed **during** the
  processing of each query, resulting in execution time being expended on
  finding corresponding rows in distinct...

...be predicted in advance and the data structures and access code can be
  customized to **improve** performance of those **queries** , even if that
  requires sacrificing performance on other, ad-hoc, queries.

  2. Lack Of Trigger...the time the data is added.

That is, the decision engine comprises a plurality pre- **joined tables** wherein the links between tables are forined at provision-time rather than **during** the query **execution process** .

[00501 The present invention (inverted exclamation mark)S suitable for implementation in any data environment requiring **maximum query** processing speed, and where typical queries are wellknown. For example, the decision,engine may be...

NonPatent Literature Abstracts

Set	Items	Description
S1	31779	JOIN???(2N)(ORDER? ? OR TABLE? ? OR PREDICATE? ? OR SELF? - OR INNER? OR NOTATION? OR EQUI OR THETA OR NATURAL? ? OR CROSS OR CARTESIAN OR OUTER OR METHOD? ? OR HASH? OR MERGE? OR SEQUENCE?) OR EQUIJOIN? ?
S2	813	(ALTER? ? OR ALTERATION OR ALTERNAT? OR CHANG??? OR CONVERT???? OR MODIFY??? OR MODIFICATION? ? OR RECONFIGUR??? OR RECONFIGURATION? ? OR REVIS??? OR TRANSFIGUR? OR TRANSFORM? OR UPDAT? OR UP()DAT???)(3N)S1
S3	10679204	PROCESS??? OR HANDL??? OR IMPLEMENTATION OR EXECUTION
S4	446156	(DURING OR TOGETHER OR SIMULTANEOUS? OR CONCURRENT? OR SAME()(TIME OR INSTANT OR MOMENT) OR COINCIDENT?? OR COINSTANTANEOUS OR WHILE OR MIDST OR THROUGHOUT)(3N)S3
S5	1566580	QUERY??? OR QUERIE? ? OR REQUEST??? OR ASK??? OR INQUIR??? OR REQUISITION? ? OR QUESTION?
S6	36921	S5(3N)(OPTIMI?ATION OR OPTIM?? OR BEST OR MAXIMUM OR GREATEST OR BIGGEST OR MAXIMAL OR TOP OR FAVORABLE OR FAVOURABLE OR IMPROV????? OR BOOST? OR ENHANC? OR INCREAS? OR BETTER OR AMPLIFY??? OR AMPLIFICATION OR INTENSIFY??? OR INTENSIFICATION)
S7	0	S2 AND S4 AND S6
S8	8	S2 AND S4
S9	7	RD (unique items)

```
S10      5   S9 NOT PY=2003:2007
S11      7   S2 AND S6
S12      6   RD  (unique items)
S13      6   S12 NOT S10
S14      6   S13 NOT PY=2003:2007
S15     10   S1 AND S4 AND S6
S16      9   RD  (unique items)
S17      9   S16 NOT (S14 OR S10)
S18      6   S17 NOT PY=2003:2007
```

10/3,K/5 (Item 1 from file: 99)

1562413 H.W. WILSON RECORD NUMBER: BAST97053010
Parallel execution of hash joins in parallel databases
Hsiao, Hui-I; Chen, Ming-Syan; Yu, Philip S

...ABSTRACT: investigated processor allocation and the use of hash filters
to improve the parallel execution of **hash   joins** . A scheme to
transform a bushy execution tree to an allocation tree was devised to
exploit the opportunity of...

...a way that inner relations in a pipeline can be made available at
approximately the **same   time** . The parallel **execution** of hash joins
was further improved through the investigation of the hash filtering
approach. Simulation...

14/3,K/1 (Item 1 from file: 35)

01160208 ORDER NO: AAD91-15385
JOIN PROCESSING ON A HYPERCUBE MULTICOMPUTER (PARALLEL ALGORITHMS)
   Author: LIN, EILEEN TIEN
   Degree: PH.D.
   Year: 1990
   Corporate Source/Institution: GEORGIA INSTITUTE OF TECHNOLOGY (0078)
   Source: VOLUME 52/01-B OF DISSERTATION ABSTRACTS INTERNATIONAL.
          PAGE 346. 186 PAGES

    ...Hash join algorithm is relatively immune to data skew. We provide
the Cube Pessimistic Adaptive- **Hash   join** algorithm as an **alternative**
that does not require the statistics needed by the Cube Adaptive-Hash join
algorithm.
    Until...

...each heuristic depends on the characteristics of a query and the use of
parallelism in **query   optimization** is definitely feasible. We believe
that this work provides a framework for parallel **query   optimization** and
the results can be applied to a more general context.

14/3,K/2 (Item 2 from file: 35)

0991076 ORDER NO: NOT AVAILABLE FROM UNIVERSITY MICROFILMS INT'L.
UPDATING DERIVED RELATIONS
Author: COBURN, NEIL
Degree: PH.D
Year: 1988
Corporate Source/Institution: UNIVERSITY OF WATERLOO (CANADA) (1141)
Source: VOLUME 49/04-B OF DISSERTATION ABSTRACTS INTERNATIONAL.
        PAGE 1262.

...be used to structure the internal level, as has been proposed as a
means of **improving query** response time. More traditionally, derived
relations may be thought of as materialized views or database...

...expression constructed from an arbitrary number of project, select and
join operations (but containing no **self - joins**). The class of **update**
operations consists of insertions, deletions, and modifications, where the
set of tuples to be deleted...

14/3,K/3   (Item 3 from file: 35)
DIALOG(R)File 35:Dissertation Abs Online
(c) 2007 ProQuest Info&Learning. All rts. reserv.

868212 ORDER NO: NOT AVAILABLE FROM UNIVERSITY MICROFILMS INT'L.
QUERY OPTIMIZATION IN DISTRIBUTED DATABASE SYSTEMS
Author: CHEN, ARBEE L. P.
Degree: PH.D.
Year: 1984
Corporate Source/Institution: UNIVERSITY OF SOUTHERN CALIFORNIA (0208)
Source: VOLUME 45/10-B OF DISSERTATION ABSTRACTS INTERNATIONAL.
        PAGE 3273.

QUERY OPTIMIZATION `IN **DISTRIBUTED DATABASE SYSTEMS**

...to the performance efficiency of a distributed database system. In
this thesis, we study the **optimization** of distributed **query** processing.
        With the objective of minimizing total data transmission cost, we
apply the semi-join...

...clauses in a query and obtain two more optimality properties. Based on
these properties, we **revise** the traditional semi- **join** processing
method such that the cost for processing a query can be reduced. We also
develop four...
...These algorithms can be used to improve the semi-join program generated
by any heuristic **query** processing algorithm.
        Although **optimal** semi-join programs for general queries are
generally infeasible, it may be worthwhile to investigate...

...get an approximate result when an exhaustive search is computationally
expensive.
        Finally, we study the **query optimization** problem by analyzing
the structure of the **query** . **Optimal** algorithms for two other special
types of queries are developed. We then discuss the **query optimization**
problem by comparing the optimal algorithms for four different types of
queries. We also identify...

14/3,K/4   (Item 1 from file: 2)

06430881   INSPEC Abstract Number: C9701-6160D-004
 Title: **Join sequence** optimization **in parallel** query **plans**
 Author(s): Langer, U.J.; Meyer, H.F.
 Author Affiliation: Dept. CS, Rostock Univ., Germany
 Conference Title: Proceedings. Seventh International Workshop on Database
and Expert Systems Applications   p.506-13
 Editor(s): Wagner, R.R.; Thoma, H.
 Publisher: IEEE Comput. Soc. Press, Los Alamitos, CA, USA
 Publication Date: 1996 Country of Publication: USA   xiii+521 pp.
 ISBN: 0 8186 7662 0   Material Identity Number: XX96-02444
 U.S. Copyright Clearance Center Code: 0 8186 7662 0/96/$05.00
 Conference Title: Proceedings of 7th International Conference and
Workshop on Database and Expert Systems Applications: DEXA 96
 Conference Date: 9-10 Sept. 1996   Conference Location: Zurich,
Switzerland
 Language: English
 Subfile: C
 Copyright 1996, IEE

 Title: **Join sequence** optimization **in parallel** query **plans**
 Abstract: We show an **alternative** way to optimize **join sequences** in
a shared nothing architecture of the distributed relational DBMS HEAD. The
hardware resources are...

14/3,K/5   (Item 2 from file: 2)

05712197   INSPEC Abstract Number: C9409-6160D-002
 Title: **A partition method for** query optimization **on outer join**
 Author(s): Heung Seo Koo; Hae Young Bae
 Journal: Journal of the Korea Information Science Society   vol.21, no.5
p.931-43
 Publication Date: May 1994 Country of Publication: South Korea
 CODEN: HJKHDC ISSN: 0258-9125
 Language: Korean
 Subfile: C

 Title: **A partition method for** query optimization **on outer join**
 Abstract: **Improving a query by changing** the **order of inner
join** operator application is one of the most efficient optimization
strategies. The size of intermediate results may vary greatly among the
alternative join orders . However, **outer joins** , the new operator
in ISO/IEC SQL-92, affect the semantics of its queries according...

... query optimizer does not have free choice among outer join orderings.
This paper presents a **query optimization** strategy for outer join. The
proposed method, called the partition method, enables a query optimizer...
 ...Identifiers: **query optimization** ;

14/3,K/6   (Item 3 from file: 2)

04441437   INSPEC Abstract Number: C89056836
Title: Extensive query processing in Starburst
Author(s): Haas, L.M.; Freytag, J.C.; Lohman, G.M.; Pirahesh, H.
Author Affiliation: IBM Almaden Res. Center, San Jose, CA, USA
Journal: SIGMOD Record   vol.18, no.2   p.377-88
Publication Date: June 1989 Country of Publication: USA
CODEN: SRECD8 ISSN: 0163-5808
Conference Title: 1989 ACM SIGMOD International Conference on Management
of Data
Conference Sponsor: ACM
Conference Date: 31 May-2 June 1989   Conference Location: Portland, OR,
USA
Language: English
Subfile: C

...Abstract: extensions (e.g. new access and storage methods) and
internal processing extensions (e.g new **join   methods** and new query
transformations). To support these features, the database query language
processor must be very powerful and highly extensible. Starburst's language
processor features a powerful **query** language, rule-based **optimization**
and 1query rewrite, and an execution systems based on an extended
relational algebra. The authors describe the...

18/3,K/1   (Item 1 from file: 35)

01779226 ORDER NO: AADAA-I9991510
Algorithms and optimization techniques for complex spatial queries
Author: Mamoulis, Nikolaos
Degree: Ph.D.
Year: 2000
Corporate Source/Institution: Hong Kong University of Science and
      Technology (People's Republic of China) (1223)
Source: VOLUME 61/10-B OF DISSERTATION ABSTRACTS INTERNATIONAL.
      PAGE 5451. 216 PAGES
ISBN: 0-599-98925-4

    Spatial databases extend conventional databases to support
multidimensional data. Although a number of spatial access **methods** and
spatial **join** algorithms have been proposed, the efficient processing of
complex spatial queries that join more than...

...is the proposal of <italic>Slot Index Spatial Join</italic> (SISJ), a
very efficient spatial **join   method** . SISJ matches two datasets, only one
of which is indexed by an R-tree. It is based on the **hash - join** paradigm
and utilizes the existing R-tree to determine the partition buckets. The
advantages of...
...multiway spatial joins, i.e. queries that match more than two spatial
datasets. We provide **query   optimization** algorithms and selectivity/cost
estimation formulae. We also propose <italic>Synchronous Traversal</italic>

(ST), a...

...indefinite queries is studied.
    Our final contribution is the extension of spatial join algorithms to
process joins and selections **simultaneously** . We show that these hybrid
methods are superior to combinations of simple selection and join
operators. We also study the **optimization** of complex spatial **queries** by
providing and evaluating selectivity estimation formulae for join queries
that include selections.

18/3,K/2   (Item 2 from file: 35)

01295680 ORDER NO: AAD93-16548
**DOME: DYNAMIC OPTIMIZATION ON MULTIPROCESSOR ENGINES, A STATISTICAL
APPROACH (OPTIMIZATION, MULTIPROCESSOR)**
 Author: BARLOS, FOTIOS N.
 Degree: PH.D.
 Year: 1993
 Corporate Source/Institution: GEORGE MASON UNIVERSITY (0883)
 Source: VOLUME 54/02-B OF DISSERTATION ABSTRACTS INTERNATIONAL.
      PAGE 930. 192 PAGES

    ...are highly skewed since characterizing the expected workload can
introduce significant overhead. We develop a **query   optimization**
approach, named Dynamic Optimization on Multiprocessor Engines (DOME), that
uses a dynamic sampling methodology to...

...frequency distribution along each level of the query tree. DOME covers
the three main multiprocessor **query optimization** areas of Workload
Partitioning, Site Selection, and Operation Ordering.
    The DOME optimizer samples the input...

...algorithms yields an order of magnitude factor improvement over prior
approaches for highly skewed data **during** Project- **Join   execution
sequences** . The Site Selection algorithms provide approximately a six fold
factor improvement over a static allocation...

18/3,K/3   (Item 3 from file: 35)

927110 ORDER NO: AAD86-18657
**DISTRIBUTED QUERY PROCESSING TECHNIQUES BASED ON PIPELINING AND DATA
SHARING IN AN INTEGRATED DATA NETWORK (OPTIMIZATION, FIFTH-GENERATION,
DATABASE MACHINES, PETRI-NET)**
 Author: MIKKILINENI, KRISHNA PRASAD
 Degree: PH.D.
 Year: 1986
 Corporate Source/Institution: THE UNIVERSITY OF FLORIDA (0070)
 Source: VOLUME 47/05-B OF DISSERTATION ABSTRACTS INTERNATIONAL.
      PAGE 2100. 204 PAGES

...this work, we develop an IDN architecture based on two key parallel processing techniques which **improve** the database **query** throughput. These are (1) pipelined and data-flow execution of database operations, and (2) intermediate...

...for optimizing the pipelined query processing in the IDN environment. To evaluate the alternative query **execution** schedules **during** the optimization **process** , detailed cost formulas for computing the cost of pipelined, distributed execution of relational queries are...
...asynchronous method of query pipeline control, (3) the intermediate result sharing technique, and (4) the **hash** -based **join** algorithms. To validate the results of the analytical study and to obtain a more accurate

...

18/3,K/4   (Item 4 from file: 35)
DIALOG(R)File 35:Dissertation Abs Online
(c) 2007 ProQuest Info&Learning. All rts. reserv.

744250 ORDER NO: AAD81-08563
QUERY OPTIMIZATION **FOR RELATIONAL DATABASE SYSTEMS**
 Author: KIM, WON
 Degree: PH.D.
 Year: 1980
 Corporate Source/Institution: UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN (0090)
 Source: VOLUME 41/11-B OF DISSERTATION ABSTRACTS INTERNATIONAL.
     PAGE 4184. 161 PAGES

QUERY OPTIMIZATION **FOR RELATIONAL DATABASE SYSTEMS**

    This report develops a new algorithm for computing the **Cartesian** product and **join** of large relations which attempts to take maximum advantage of available main-memory buffer space...

...of queries embedded in some algorithmic programming language to determine those queries that can be **simultaneously   processed** .
    Finally, this report identifies the essential functional components of a database machine that can support...

18/3,K/5   (Item 1 from file: 6)
DIALOG(R)File 6:NTIS
(c) 2007 NTIS, Intl Cpyrght All Rights Res. All rts. reserv.

1470968 NTIS Accession Number: N89-29079/5
 Application of Constraints in Query Optimization
 Vankuijk, H. J. A.
 Technische Univ. Twente, Enschede (Netherlands). Dept. of Computer Science.
 Corp. Source Codes: 090700004; U1294434
 Sponsor: National Aeronautics and Space Administration, Washington, DC.
 Report No.: MEMO-INF-88-55
 1988 84p
 Languages: English
 Journal Announcement: GRAI9002; STAR2723

Application of Constraints in Query Optimization
... of a framework unifying the solution to a number of existing and new problems encountered **during** the overall **process** of (semantic) **query optimization** in (distributed) database systems. Domain constraints, attribute constraints, and tuple constraints are applied to explicitly...

... The context of the theory presented is found in the knowledge-based approach to semantic **query optimization** in a distributed environment and the explicit representation of **query optimization** knowledge of various sources so that it can be managed (added, deleted, modified). Constraints are...

...knowledge (including the so-called if-then rules known from literature), to augment selection and **join predicate** formulas to arrive at more efficient schedules for these operations, to define and apply horizontal...
Descriptors: *Constraints; *Distributed processing; * **Optimization** ; * **Query languages** ;˙ *Semantics; Communication theory; Computer systems design; Computer systems performance; Data base management systems; Operating...

18/3,K/6   (Item 1 from file: 34)

02258446   Genuine Article#: KN982   No. References: 9
˙Title: **COUNTER REDUCTION TECHNIQUE FOR COMBINED PROCESSING OF SELECTION AND**
    JOIN
Author(s): TOYAMA M
Corporate Source: KEIO UNIV,DEPT ADM ENGN,3-14-1 HIYOSHI/YOKOHAMA/KANAGAWA
    223/JAPAN/

...Abstract: operands. The counter reduction technique reduces the size of
    both the join operands before or **during** the join **processing** even if
    the selection is specified on only one operand. The trick can be used
    ...

...reduction can be applied to an important class of joins called key
    joins. A key **join** is a **natural join** between the primary key of
    one operand and a part of the primary key of...
...Research Fronts: DATA ACCESS; ADAPTIVE HASHING; LINEAR OCTREE;
    GEOGRAPHIC INFORMATION-SYSTEMS; DIGITAL TRIES)
    91-6811 001 (DISTRIBUTED **QUERY OPTIMIZATION** ; RELATIONAL ALGEBRA)
    91-8233 001 (DISTRIBUTED RELATIONAL DATABASE; APPROXIMATING BLOCK
    ACCESSES IN RANDOM FILES; PARALLEL...

NonPatent Literature Fulltext

File 275:Gale Group Computer DB(TM) 1983-2007/Jul 24
    (c) 2007 The Gale Group
File 47:Gale Group Magazine DB(TM) 1959-2007/Aug 14
    (c) 2007 The Gale group
File 621:Gale Group New Prod.Annou.(R) 1985-2007/Aug 22
    (c) 2007 The Gale Group
File 636:Gale Group Newsletter DB(TM) 1987-2007/Aug 27
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    (c) 2007 McGraw-Hill Co. Inc
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File 635:Business Dateline(R) 1985-2007/Aug 28
    (c) 2007 ProQuest Info&Learning
File   9:Business & Industry(R) Jul/1994-2007/Aug 22
    (c) 2007 The Gale Group
File 610:Business Wire 1999-2007/Aug 28
    (c) 2007 Business Wire.
File 810:Business Wire 1986-1999/Feb 28
    (c) 1999 Business Wire
File 647:CMP Computer Fulltext 1988-2007/Sep W3
    (c) 2007 CMP Media, LLC
File 674:Computer News Fulltext 1989-2006/Sep W1
    (c) 2006 IDG Communications
File 369:New Scientist 1994-2007/Jul W5
    (c) 2007 Reed Business Information Ltd.
File 613:PR Newswire 1999-2007/Aug 28
    (c) 2007 PR Newswire Association Inc
File 813:PR Newswire 1987-1999/Apr 30
    (c) 1999 PR Newswire Association Inc
File 370:Science 1996-1999/Jul W3
    (c) 1999 AAAS
File 16:Gale Group PROMT(R) 1990-2007/Aug 27
    (c) 2007 The Gale Group
File 160:Gale Group PROMT(R) 1972-1989
    (c) 1999 The Gale Group
File 484:Periodical Abs Plustext 1986-2007/Aug W2
    (c) 2007 ProQuest
File 634:San Jose Mercury Jun 1985-2007/Aug 23
    (c) 2007 San Jose Mercury News
File 696:DIALOG Telecom. Newsletters 1995-2007/Aug 27
    (c) 2007 Dialog

Set   Items   Description
S1   70026 JOIN???(2N)(ORDER? ? OR TABLE? ? OR PREDICATE? ? OR SELF? -
    OR INNER? OR NOTATION? OR EQUI OR THETA OR NATURAL? ? OR CROSS
    OR CARTESIAN OR OUTER OR METHOD? ? OR HASH? OR MERGE? OR SEQ-

UENCE?) OR EQUIJOIN? ?

S2   793   (ALTER? ? OR ALTERATION OR ALTERNAT? OR CHANG??? OR CONVER-
              T???? OR MODIFY??? OR MODIFICATION? ? OR RECONFIGUR??? OR REC-
              ONFIGURATION? ? OR REVIS??? OR TRANSFIGUR? OR TRANSFORM? OR U-
              PDAT? OR UP()DAT???)(3N)S1
S3   15010339 PROCESS??? OR HANDL??? OR IMPLEMENTATION OR EXECUTION
S4   726520   (DURING OR TOGETHER OR SIMULTANEOUS? OR CONCURRENT? OR SAM-
              E()(TIME OR INSTANT OR MOMENT) OR COINCIDENT?? OR COINSTANTAN-
              EOUS OR WHILE OR MIDST OR THROUGHOUT)(3N)S3
S5   10736364 QUERY??? OR QUERIE? ? OR REQUEST??? OR ASK??? OR INQUIR???
              OR REQUISITION? ? OR QUESTION?
S6   284069   S5(3N)(OPTIMI?ATION OR OPTIM?? OR BEST OR MAXIMUM OR GREAT-
              EST OR BIGGEST OR MAXIMAL OR TOP OR FAVORABLE OR FAVOURABLE OR
              IMPROV????? OR BOOST? OR ENHANC? OR INCREAS? OR BETTER OR AM-
              PLIFY??? OR AMPLIFICATION OR INTENSIFY??? OR INTENSIFICATION)
S7   0   S2(100N)S4(100N)S6
S8   28   S2(25N)S4
S9   10   RD (unique items)
S10   3   S9 NOT PY=2003:2007
S11   0   S2(25N)S6
S12   13   S2(100N)S6
S13   8   RD (unique items)
S14   8   S13 NOT S10
S15   8   S14 NOT PY=2003:2007
S16   0   S1(25N)S4(25N)S6
S17   13   S1(100N)S4(100N)S6
S18   9   RD (unique items)
S19   9   S18 NOT (S15 OR S10)
S20   9   S19 NOT PY=2003:2007

15/3,K/1   (Item 1 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
(c) 2007 The Gale Group. All rts. reserv.

01551701   SUPPLIER NUMBER: 13074899   (USE FORMAT 7 OR 9 FOR FULL TEXT)
Microsoft makes its move. (Access and FoxPro 2.5 data base management
 systems) (Desktop Developer)(Tutorial) (Column)
Frank, Maurice
DBMS, v5, n13, p68(7)
Dec, 1992
DOCUMENT TYPE: Column   ISSN: 1041-5173   LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 6406   LINE COUNT: 00509

...   end.
    Queries
    The Access Graphical Query By Example (GQBE) windows display table
objects along the **top** with **query** columns below. Access prompts for one
or more tables or queries when the query is...

...fields from the table to the query column area. A drop-down list
presents another **alternative** . You **join** **tables** by dragging the linking
field from one table to its counter-part in the related...

15/3,K/3   (Item 1 from file: 621)
DIALOG(R)File 621:Gale Group New Prod.Annou.(R)
(c) 2007 The Gale Group. All rts. reserv.

01301283   Supplier Number: 45784486 (USE FORMAT 007 FOR FULLTEXT)
MICROSOFT INTRODUCES VISUAL BASIC VERSION 4.0; THE FAST AND EASY WAY TO
 CREATE 32-BIT OLE-BASED APPLICATIONS
PR Newswire, p912SE006
Sept 12, 1995
Language: English   Record Type: Fulltext
Document Type: Newswire; Trade
Word Count: 2359

...   developers
      everything they need to keep data across many databases
      synchronized.
   - Rushmore technology. Rushmore(TM) **query** technology greatly
      improves the speed of many queries on Indexed Sequential
      Access Method (ISAM) local databases -- such as...

...tables.
      - Referential integrity. Programmers now have programmatic access
         to referential integrity provided by Jet.
      - Cascading **updates** and deletes. When **tables** are **joined** ,
updates
         to the "one" side of the join are cascaded throughout the

"many" side of the...

15/3,K/6   (Item 1 from file: 635)
DIALOG(R)File 635:Business Dateline(R)

0137471 90-20230
**ShareBase First to Pass ANSI SQL Validation; New Software Includes Advanced
    Query Optimizer**
Humphrey, Scott; Sullivan, Joan
Business Wire (San Francisco, CA, US) s1 p1
PUBL DATE: 900426
WORD COUNT: 956
DATELINE: Los Gatos, CA, US

TEXT:

...and generates the corresponding plan, while the SQL executor
executes the plan. The ShareBase III **query** processor **enhances** the
performance of the Server/8000 in a number of ways:

-- Improved Searching Techniques: ShareBase...

...searching for the optimal strategy. Most optimizers are capable of
looking at only a few **alternate join orders** , hence when a query
contains more than a small number of joins, the quality of...

15/3,K/7   (Item 1 from file: 810)
DIALOG(R)File 810:Business Wire

0173263 BW102

**SHAREBASE: ShareBase first to pass ANSI SQL validation; new software
    includes advanced query optimizer**

April 26, 1990

Byline: Business Editors/Computer Writers

...and generates the corresponding plan, while the SQL executor execute
s
the plan. The ShareBase III **query** processor **enhances** the performance
of the Server/8000 in a number of ways:
    -- Improved Searching Techniques: ShareBase...

...searching for the optimal strategy.
Most optimizers are capable of looking at only a few **alternate   join**
 orders , hence when a query contains more than a small number of joins,
the quality of...

15/3,K/8   (Item 1 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)

03985034   Supplier Number: 45785154 (USE FORMAT 7 FOR FULLTEXT)
MICROSOFT: Microsoft introduces Visual Basic 4.0
M2 Presswire, pN/A
Sept 13, 1995
Language: English   Record Type: Fulltext
Document Type: Newswire; Trade
Word Count: 2413

...   giving developers everything they need to keep data across many
databases synchronized.
    * Rushmore Technology. Rushmore **query optimization** technology
greatly **improves** the speed of many queries on ISAM (Local databases such

as Microsoft Fox and Microsoft...

...tables.
    * Referential Integrity. Programmers now have programmatic access to
referential integrity provided by Jet.
    * Cascading **Updates** And Deletes. When **tables** are **joined** ,
updates to the "one" side of the join are cascaded throughout the "many"
side of the...

 20/3,K/2   (Item 2 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
(c) 2007 The Gale Group. All rts. reserv.

01712862   SUPPLIER NUMBER: 16434238   (USE FORMAT 7 OR 9 FOR FULL TEXT)
A different model for databases. (Online Analytical Processing)
Dorrian, Jim
EXE, v9, n2, p64(3)
July, 1994
ISSN: 0268-6872   LANGUAGE: ENGLISH   RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 2617   LINE COUNT: 00214

...   If the database is broken up into smaller tables then performance
suffers because of complicated **table joins** . If users combine tables
into a denormalised table then they must deal with extremely large...

...CPUs (and machines) to scan a database simultaneously. The results are
then merged and sorted **together** .
    While parallel **processing** can be used to speedup certain types of
queries (eg queries that scan an entire...

...other types of queries which cannot be broken up into parallel
processes. For example, parallel **query** options do not **improve**
performance when searching for specific ranges of data. Parallel query
options require very expensive symmetrical...
...cannot reference other rows in the table nor can they reference other
tables unless the **tables** are first **joined** in a view. These limitations
are intrinsic in the relational model because it only works...

 20/3,K/3   (Item 3 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
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01521909   SUPPLIER NUMBER: 12353479   (USE FORMAT 7 OR 9 FOR FULL TEXT)
Parallel database systems: the future of high performance database systems.
 (Technical)
DeWitt, David; Gray, Jim
Communications of the ACM, v35, n6, p85(14)
June, 1992
DOCUMENT TYPE: Technical   ISSN: 0001-0782   LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 10200   LINE COUNT: 00840

...   bad, then there will be little variance in the hash bucket size. In
these cases **hash - join** is a linear-time join algorithm with linear
speedup and scaleup. Many optimizations of the parallel **hash - join**
algorithm have been discovered over the last decade. In pathological skew
cases, when many or...

...all the tuples. In these cases no algorithm is known to speedup or
scaleup.
    The **hash - join** example shows that new parallel algorithms can
improve the performance of relational operators. This is...
...Interface Processors (IFPs) and Access Module Processors (AMPs). The
IFPs handle communication with the host, **query** parsing and **optimization**
, and coordination of AMPs **during** query **execution** . The AMPs are
responsible for executing queries. Each AMP typically has several disks and
a...

 20/3,K/5   (Item 2 from file: 621)
DIALOG(R)File 621:Gale Group New Prod.Annou.(R)
(c) 2007 The Gale Group. All rts. reserv.

01155452   Supplier Number: 41871132 (USE FORMAT 007 FOR FULLTEXT)
Precision to unveil new version of Superbase (R) 4 Windows (TM) and new
 Superbase SQL Library at Windows & OS/2 Show
News Release, p1
Feb 18, 1991
Language: English   Record Type: Fulltext
Document Type: Magazine/Journal; Trade
Word Count: 965

...   A new Ouery Optimization facility has been provided for improved
    execution of complex multi-table **queries** . The **optimization**
results in
    significant performance **increases** over non-optimized **queries** and'
    reports, and includes a comprehensive **Outer   Join** capability.

    * New image-handling features result in better fidelity and greater
    flexibility. These include support...

...edit controls and icons. Version 1.3 also
    provides triggers for both pre- antl post- **processing   during** data
    entry.

    Version 1.3 isybeing treated as an upgrade rather than an update to...

20/3,K/6 (Item 1 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)

01035935 96-85328
Data delivery
White, Colin
WORD COUNT: 2775

...TEXT: query processing or parallel transaction processing. Parallel
query processing is beneficial for decision-support applications, **while**
parallel transaction **processing** boosts the performance of OLTP
applications.

The objective of parallel processing in decision support is to **improve**
query response time. With parallel query processing, each query is
decomposed by the DBMS server into...

...from external storage, however. Complex queries will involve such
activities as accessing data from multiple **tables**, **joining** that data
together and sorting it. The more these operational tasks can be done in...

20/3,K/7 (Item 2 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)

00616926 92-32028
Parallel Database Systems: The Future of High Performance Database Systems
DeWitt, David; Gray, Jim
· WORD COUNT: 9579

...TEXT: bad, then there will be little variance in the hash bucket size.
In these cases **hash - join** is a linear-time join algorithm with linear
speedup and scaleup. Many optimizations of the parallel **hash - join**
algorithm have been discovered over the last decade. In pathological skew
cases, when many or...

...all the tuples. In these cases no algorithm is known to speedup or
scaleup.

The **hash - join** example shows that new parallel algorithms can improve
the performance of relational operators. This is...

...Interface Processors (IFPs) and Access Module Processors (AMPs). The
IFPs handle communication with the host, **query** parsing and **optimization**
, and coordination of AMPs **during** query **execution**. The AMPs are
responsible for executing queries. Each AMP typically has several disks and
a...